# 19CS21P3 - DATABASE and IT ESSENTIALS LABORATORY

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Category:** | Program Core | **Credits:** | 2 |
| **Course Type:** | Practical | **Lecture - Tutorial - Practical:** | 0-0-4 |
| **Prerequisite:** | Student need to have basic knowledge about fundamentals of physical organization of a computer and aware of its operations and mathematical formulae and preliminary fundamentals. | **Sessional Evaluation:****Univ. Exam Evaluation:****Total Marks:** | 4060100 |

|  |  |
| --- | --- |
| **Course Outcomes** | Upon successful completion of the course, the students will be able to identify the physical components of a computer system, assembly, execution of business problems using application software and various Database concepts to develop applications using SQL. |
| **Course Content** | 1. Assembling and disassembling the system hardware components of a personal computer.
2. To Practice on basics of Networking (Wired and Wireless network connections)
3. To Practice Basic MS-Word features (like Formatting, Tables, Sorting, Sections etc.,), Spread sheet experiments using EXCEL and MS-Power Point.
4. Creating, altering and dropping of tables and inserting rows into a table (use constraints while creating tables) examples using SELECT command.
5. Queries along with sub Queries using ANY, ALL, IN, EXISTS, NOTEXISTS, UNION, INTERSECT Constraints.
6. Queries using Aggregate functions (COUNT, SUM, AVG, MAX and MIN) GROUP BY, HAVING, Creating and dropping of Views.
7. Queries using Conversion functions (to\_char, to\_number and to\_date), string functions (Concatenation, lpad, rpad, ltrim, rtrim, lower, upper, initcap, length, substr and instr), date functions (Sysdate, next\_day, add\_months, last\_day, months\_between, least, greatest, trunc, round, to\_char, to\_date).
8. Implement the following
	1. Creation of simple PL/SQL program which includes declaration section, executable section and exception –Handling section (Ex. Student marks can be selected from the table and printed for those who secured first class and an exception can be raised if no records were found).
9. Develop programs using feature parameters in a CURSOR, FOR UPDATE CURSOR, WHERE CURRENT of clause and CURSOR variables.
10. Develop Programs using BEFORE and AFTER Triggers, Row and Statement Triggers and INSTEAD OF Triggers.
 |
| **Text Books and References:** | Text Books:1. Peter Norton “Introduction to Computers”, McGraw Hill Publishers, 7th Edition 2011.
2. ORACLE DATA BASE LOG PL/SQL Programming SCOTT URMAN, Tata Mc- Graw Hill.
 |
| Reference Books:1. Alex Leon and Mathews Leon “Fundamentals of Information Technology”, Vikas Publishers, 2nd Edition 1999.
2. David Cyganski & John A.Orr “Information Technology-Inside and Outside”, Pearson Education, 2002.
3. Marilyn Wolf “Computers as Components”, MK publications, 3rd Edition, 2014.
4. Oracle Database 12C Hands-on SQL and PL/SQL Paperback – Import, 29 Feb 2016 by Satish Asnani.
5. Oracle Pl/Sql Programming:A Developer's Workbook, Steven Feuerstein , Andrew Odewahn
 |
| **E-Resources** | 1. <https://nptel.ac.in/courses>
2. <https://freevideolectures.com/university/iitm>
 |